Spatial use by female Steller sea lions on Dolgaya Rock rookery in the Kuril Islands, Russia.

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Steller sea lions reproduce on traditional rookeries. On many of these, the density of animals is high; the resource of space can be limited. The purpose of the work presented here is to explore mechanisms which optimize the distribution of space among females. Observations of sea lions were performed at the rookery during daylight hours. Spatial use by females was recorded using digital photography and was reconstructed with the aid of a software package developed for the processing of spatial data. The time period between giving birth and copulation on Dolgaya Rock was on average 12 (s.d. 4) days. During this time, females usually moved within 2 (s.d.=3) m of their first observed location, while the geometrical center of the spatial displacements during the day shifts on average about 1 m from the parturition site. After copulation, the mobility of females increases to 3 (s.d. 4) m ($p<0.005$). The mean minimum distance to the nearest female in the period between parturition and copulation is higher (6 m) than in th eperiod after copulation (4 m) ($p<0.005$). Females begin to take foraging trips into the water on average 1 (s.d.=1) day after copulation. Upon their return, females regain a position on the rookery up to 4 (s.d.=5) m from the location previously inhabited. Thus, while females display high fidelity to a specific region of the rookery, as their pups age, they display behavioral plasticity and readily change their locations.